

TRANSITIVITY IN NATURAL SYNTAX: ERGATIVE LANGUAGES

Natural Syntax is a (developing) deductive linguistic theory that determines the presuppositions on the basis of which a (morpho)syntactic state of affairs can be made predictable, and thus synchronically explained. The two basic kinds of presuppositions are what are known as naturalness scales and rules of alignment among corresponding values of any two scales. Every (morpho)syntactic state of affairs is represented by two comparable variants. Natural Syntax contains no generative component.

I begin by listing the criteria with which Natural Syntax substantiates naturalness scales:

- (a) The parameter of favourable for the speaker and of favourable for the hearer. What is favourable for the speaker is more natural, the speaker being the centre of communication. This view of naturalness is commonplace in linguistics (Havers 1931: 171), under the names of tendency to economize (utilized first of all by the speaker) and tendency to be accurate (mainly in the hearer's interest).
- (b) The principle of least effort (Havers 1931: 171). What conforms better to this principle is more natural for the speaker. What is cognitively simple (for the speaker) is easy to produce, easy to retrieve from memory, etc.
- (c) Degree of integration into the construction. What is better integrated into its construction is more natural for the speaker.
- (d) Frequency. What is more frequent tokenwise is more natural for the speaker. What is cognitively simpler (for the speaker) is used more. (However, the reverse does not obtain: what is natural for the speaker is not necessarily more frequent.)
- (e) Small vs. large class. The use of (a unit pertaining to) a small class is more natural for the speaker than the use of (a unit pertaining to) a large class. During speech small classes are easier for the speaker to choose from than are large classes.
- (f) The process criterion. Any process is natural. Only movement requires special comment. Given a construction, movement of a unit to the left is more natural for the speaker than movement of a unit to the right. (Movement to the left is more natural than non-movement; movement to the right is less natural than non-movement.)
- (g) Acceptable vs. non-acceptable use. What is acceptable is more natural for the speaker than what is not acceptable. The very reason for the acceptability of a syntactic unit is its greater naturalness for the speaker with respect to any corresponding non-acceptable unit.

* *Author's address:* Filozofska fakulteta, Oddelek za primerjalno in splošno jezikoslovje, Aškerčeva 2, 1000 Ljubljana, Slovenia. Email: janez.oresnik@sazu.si

- (h) What is more widespread in the languages of the world is more natural for the speaker (the typological criterion). What is cognitively simpler (for the speaker) is realized in more languages.

The basic format of our naturalness scales is $\text{>nat}(A, B)$, in which A is favourable for the speaker and B is favourable for the hearer. A and B are the “values” of the scale. Two expanded scales are allowed, viz. $\text{>nat}(A + B, B)$ and $\text{>nat}(A, A + B)$; they are valid if the corresponding scale of the format $\text{>nat}(A, B)$ is valid. Exemplification below.

The above criteria of naturalness (henceforth, axioms) are utilized to support our naturalness scales. Normally it suffices to substantiate any scale with one criterion, which backs up either value A or value B of the scale; the non-supported value is allotted the only remaining position in the scale. Of course, a scale may be supported with more than one criterion. Any clash among the criteria applied to a scale is to be handled with constraints on the combinations of criteria. So far only a few constraints have been formulated; I have not yet encountered much useable crucial language data.

The naturalness scales are an essential part of what are known as deductions, in which Natural Syntax expresses its predictions about the state of affairs in language data. An example of a deduction:

English. The numerical indication of frequency normally consists of a cardinal number followed by the word *times* (e.g., *four times*) except that there are one-word expressions available for the lowest numbers: *once*, *twice* and archaic *thrice* (*Collins Cobuild* 1990: 270–271).

The two variants: the type *once* and the type *four times*.

1. The assumptions of Natural Syntax:

1.1. >nat (type *once*, type *four times*)

I.e., the type *once* is more natural than the type *four times*. – According to the criterion of least effort, item (b) in the list of axioms.

1.2. >nat (low, non-low) / number

I.e., any low number is more natural than any non-low number (Mayerthaler 1981: 15). – Low numbers are more easily accessible to the speaker. According to the criterion of favourable for the speaker, item (a) in the list of axioms.

2. The rules of parallel alignment of corresponding values:

2.1. value A tends to associate with value C,

2.2. value B tends to associate with value D. See Note 4.1 below.

3. The consequences:

If a language distinguishes between low and non-low numbers in numerical indications of frequency such that one kind of number uses the pattern *four times* and the other kind of number uses the pattern *once*, it is the low numbers that tend to use the pattern *once* and it is the non-low numbers that tend to use the pattern *four times*. Q.E.D. (The reverse situation is not expected.)

4. Notes

4.1. Value A of scale 1.1 (= the type *once*) tends to combine with value C of scale 1.2 (= low number). Value B of scale 1.1 (= the type *four times*) tends to combine with value D of scale 1.2 (= non-low number). Similarly in the remaining deductions, with the proviso that the alignment (unlike here) is chiasitic in most cases. Chiasitic alignment is explained below.

4.2. Natural Syntax cannot predict the cut-off point between low and non-low numerals.

4.3. The consequences (item 3 of any deduction) are meant to be universal statements. In some cases I could not avoid mentioning language-particular data.

This deduction maintains that the state of affairs cannot be the reverse; i.e., that numerals above *two* (or *three*) would be one-word formations and that numerals under *three* (or *four*) would be two-word formations. All predictions of Natural Syntax are restricted to such modest claims about the unlikelihood of the reverse situation.

In every deduction, the rules of alignment play a prominent role; compare item 2 in the above deduction. The alignment rules regulate the combinations of corresponding values of the two naturalness scales mentioned in the deduction.

The alignment can be parallel or chiasitic. Suppose that the two scales are >nat (A, B) and >nat (C, D). Parallel alignment pairs value A with value C, and value B with value D. Chiasitic alignment pairs A with D, and B with C.

A paramount question is when the alignment is parallel and when chiasitic. Parallel alignment is the default case. Chiasitic alignment is necessary whenever a given deduction is limited to the language data obtaining within an “unnatural environment”. This is defined as value B of the scale >nat (A, B).

An example. In the scale >nat (main, dependent) / clause, the value “dependent clause” is an unnatural environment. This means: all deductions whose language data lie within the environment “dependent clause” require the implementation of chiasitic alignment.

Chiasitic alignment is prohibited when a naturalness scale is substantiated with an axiom. If, however, an axiom is engaged as one of the scales in a deduction, it obeys the usual distribution of the alignment rules.

The insistence of Natural Syntax on the distinction between parallel and chiasitic alignments stems indirectly from the work of Henning Andersen within markedness theory. Andersen observes situations such as the following in all human semiotic systems: on an everyday occasion casual wear is unmarked and formal wear marked; on a festive occasion it is the formal wear that is unmarked, whereas casual wear is marked. See Andersen 1972: 45, especially fn. 23. This example expressed with our scales: (i) >nat (casual, formal) / wear, (ii) >nat (-, +) / marked. A third scale as the source of the environment of the deduction: >nat (everyday, festive) / occasion. If the environment is “everyday occasion”, the alignment within (i-ii) is parallel; if the environment is “festive occasion”, the alignment within (i-ii) is chiasitic.

Natural Syntax is a deductive theory and therefore my obvious chief aim is to disprove the theory. The (likewise obvious) strategy used is twofold: (1) the formal apparatus of the theory is gradually more and more constrained, and (2) I search for

counterexamples that could not be eliminated by changing the theory in a principled way. Unfortunately my endeavour has not yet borne fruit.

This paper treats some examples of transitivity in Hopper & Thompson (1980; henceforth H&T) utilizing the apparatus of Natural Syntax. The exemplification will be limited to (preponderantly) ergative languages. Due to space limitations, accusative languages (also discussed in H&T) are relegated to another paper.

H&T's examples are reproduced below faithfully. H&T's descriptions of the language data (accompanying the examples) are reworded here in a terse, but hopefully not distorted, form.

H&T demonstrated a great deal of parallelism in the structure and interpretation of their data. This feature has been further strengthened in my text through a purposefully schematic (some might say tedious) presentation.

An important source of inspiration was Dixon (1994).

It is necessary to first set up the following naturalness scale: >nat (intransitivity, transitivity); i.e., intransitivity is more natural than transitivity. The scale is supported by the criterion of least effort, item (b) in the list of axioms: the number of core participants is usually smaller in intransitive constructions than in transitive ones. The right value of the scale (= transitivity) constitutes an unnatural environment. Consequently, all deductions limited to this environment require chiastic alignment among the corresponding values of the scales utilized in such deductions.

Almost all of H&T's examples adduced below consist of a pair each: one member is an ergative construction and the other member is an antipassive.

One property of antipassive constructions is that they are invariably detransitivized with respect to their corresponding ergative constructions. My work suggests that it is necessary to distinguish two degrees of detransitivization:

(A) Weak detransitivization. The antipassive construction remains transitive. Together with the corresponding ergative construction, it is located within the unnatural environment "transitivity" and requires chiastic alignment.

(B) Strong detransitivization. The antipassive construction becomes truly intransitive and, unlike the corresponding ergative construction, is not situated within the unnatural environment "transitivity" and hence requires parallel alignment (unless some other unnatural environment intervenes).

Weak detransitivization obtains when the crucial arguments of the verb are restricted to the ergative and the absolutive/nominative case; or when the patient is incorporated into its verb. In all other instances the detransitivization is strong.

The incorporation of the patient into the verb does not lead to the patient's loss of participant status. The patient preserves its participant status even when the incorporation is complete; i.e., the patient becomes a morpheme of the verb. See the example in deduction (1) below. The argumentation in favour of this position is found in Sadock (1980: 306–313, on Greenlandic Eskimo).

It is unclear why the distinction between weak and strong detransitivization obtains. To the best of my knowledge, this distinction has not previously been noticed.

Within ergative languages, the following two unnatural environments are essential: (1) "transitivity" and (2) "patient". The environment "transitivity" is culled from the scale

>nat (intransitivity, transitivity) mentioned above. The environment “patient” is culled from the scale >nat (agent, patient), supported by the circumstance that the speaker (the centre of communication) is often the agent (in the spirit of Mayerthaler 1981: 13).

It follows quite clearly from the deductions below that the “patient” creates an unnatural environment only when one or more of its syntactic features are at stake. For instance, when the movement or the grammatical case of some patient is discussed, the patient constitutes an unnatural environment. When some semantic property of a patient is discussed, that patient does not form an unnatural environment (in the syntactic framework of Natural Syntax). Perhaps it would be otherwise in semantic deductions.

Such behaviour of the patient presumably also obtains in accusative languages, where, however, the behaviour is masked due to the circumstance that the patient invariably participates in deductions involving chiasitic alignment anyway because all pertinent deductions proceed in the unnatural environment “transitivity”. As mentioned above, this does not apply so consistently to the patients of ergative languages.

I begin with the following deduction not taken from among H&T’s examples:

(0) Ergative languages. The sample of ergative languages adduced below suggests that the weakly detransitivized antipassive is rarer in the ergative languages than the strongly detransitivized antipassive.

The two variants: strongly and weakly detransitivized antipassive.

1. The assumptions of Natural Syntax:

1.1. >nat (strongly, weakly) / detransitivized antipassive

I.e., the strongly detransitivized antipassive is more natural than the weakly detransitivized antipassive. – The strongly detransitivized antipassive has more features of intransitive constructions than the weakly detransitivized antipassive. (The naturalness of intransitive constructions is based on the circumstance that they code fewer core participants than transitive constructions.) According to the criterion of least effort, item (b) in the list of axioms.

1.2. >nat (more, less) / widespread in languages

I.e., what is more widespread in languages is more natural than what is less widespread. – This is the typological criterion itself, item (h) in the list of axioms.

2. The rules of parallel alignment:

2.1. value A tends to associate with value C,

2.2. value B tends to associate with value D.

3. The consequences:

If languages distinguish between strongly and weakly detransitivized antipassives such that one option is more widespread in languages and the other option is less widespread, then it is the strongly detransitivized antipassive that tends to be more widespread and it is the weakly detransitivized antipassive that tends to be less widespread. Q.E.D. (The reverse situation is not expected.)

I continue with the discussion of H&T’s examples in the format of deductions:

(1) = H&T (16). Chukchee. In the ergative clause the agent assumes the ergative case, the verb is marked as transitive and the +referential patient assumes the absolutive

case. In the antipassive clause the patient is –referential, the agent assumes the nominative case, the verb is marked as intransitive and the patient is incorporated into the verb.

<i>Tumg-e</i>	<i>na-ntəwat-ən</i>	<i>kupre-n.</i>
friends-ERG	set-TRANS	net-ABS

‘The friends set the net.’

<i>Tumg-ət</i>	<i>KOPRA-ntəwat-GʔAT.</i>
friends-NOM	net-set-INTR

‘The friends set nets.’

The antipassive clause is weakly detransitivized: the agent assumes the nominative case and the patient is incorporated into its verb. The following deductions (1i–iii) proceed in the unnatural environment “transitivity”, and consequently require chiasitic alignment.

Deduction (1i) deals with the relationship between the referentiality of the patient and the case of the agent. The subject matter of deduction (1ii) is the relationship between the referentiality of the patient and the incorporation of the patient.

I do not have enough information about the two verbs *na-ntəwat-ən* and *ntəwat-GʔAT* to be able to formulate a deduction involving them. Mutatis mutandis this remark is also valid for all the following deductions.

(1i) The two variants: the +/-referential patient.

1. The assumptions of Natural Syntax:

1.1. >nat (+, –) / referential patient

I.e., +referential is more natural than –referential. – The speaker (as the centre of communication) is +referential (in the spirit of Mayerthaler 1981: 13). According to the criterion of favourable for the speaker, item (a) in the list of axioms.

1.2. >nat (nominative, ergative) / case of agent

I.e., a nominative is more natural than an ergative. – In ergative languages the nominative is zero coded (cf. Mayerthaler et al. 1998: 102 on the ergative and absolutive cases) and is natural according to the criterion of least effort, item (b) in the list of axioms.

2. The rules of chiasitic alignment:

2.1. value A tends to associate with value D,

2.2. value B tends to associate with value C.

3. The consequences:

If a language distinguishes between +referential and –referential patients such that one is accompanied by the ergative case of the agent and the other is accompanied by the nominative case of the agent, then it is the +referential patient that tends to be accompanied by the ergative case of the agent and it is the –referential patient that tends to be accompanied by the nominative case of the agent. Q.E.D. (The reverse situation is not expected.)

(1ii) The two variants: the +/-referential patient.

1. The assumptions of Natural Syntax:

1.1. >nat (+, -) / referential patient

I.e., +referential is more natural than -referential. – The speaker (as the centre of communication) is +referential (in the spirit of Mayerthaler 1981: 13). According to the criterion of favourable for the speaker, item (a) in the list of axioms.

1.2. >nat (+, -) / incorporated patient

I.e., an incorporated patient is more natural than a non-incorporated patient. – According to the criterion of integration into construction, item (c) in the list of axioms.

2. The rules of chiasitic alignment:

2.1. value A tends to associate with value D,

2.2. value B tends to associate with value C.

3. The consequences:

If a language distinguishes between +referential and -referential patients such that one is incorporated into its verb and the other is not incorporated, then it is the +referential patient that tends not to be incorporated and it is the -referential patient that tends to be incorporated into its verb. Q.E.D. (The reverse situation is not expected.)

(2) = H&T (19). Tongan. A number of verbs use the ergative construction. In such cases, any -referential patient is incorporated into its verb (i.e., moved from the canonical position of the patient to contact with the verb) and the agent assumes the absolutive case.

<i>Na'e kai</i>	'e	<i>Sione</i>	'a	<i>e</i>	<i>ika.</i>
PAST eat	ERG	John	ABS	DEF	fish

'John ate the fish.'

<i>Na'e kai</i>	<i>ika</i>	'a	<i>Sione.</i>
PAST eat	fish	ABS	John

'John ate fish.'

The antipassive clause is weakly detransitivized: the agent assumes the absolutive case and the patient is incorporated into (moved next to) its verb. The following deductions (2i-ii) proceed in the unnatural environment “transitivity” and consequently require chiasitic alignment.

The subject matter of deduction (2i) is the relationship between the referentiality of the patient and the incorporation of the patient. Deduction (2ii) deals with the relationship between the referentiality of the patient and the case of the agent.

(2i) The two variants: the +/-referential patient.

1. The assumptions of Natural Syntax:

1.1. >nat (+, -) / referential patient

I.e., +referential is more natural than –referential. – The speaker (as the centre of communication) is +referential (in the spirit of Mayerthaler 1981: 13). According to the criterion of favourable for the speaker, item (a) in the list of axioms.

1.2. >nat (+, –) / incorporated patient

I.e., an incorporated patient is more natural than a non-incorporated patient. – According to the criterion of integration into construction, item (c) in the list of axioms.

2. The rules of chiastic alignment:

2.1. value A tends to associate with value D,

2.2. value B tends to associate with value C.

3. The consequences:

If a language distinguishes between +referential and –referential patients such that one is incorporated into its verb and the other is not incorporated, then it is the +referential patient that tends not to be incorporated and it is the –referential patient that tends to be incorporated into its verb. Q.E.D. (The reverse situation is not expected.)

(2ii) The two variants: the +/-referential patient.

1. The assumptions of Natural Syntax:

1.1. >nat (+, –) / referential patient

I.e., +referential is more natural than –referential. – The speaker (as the centre of communication) is +referential (in the spirit of Mayerthaler 1981: 13). According to the criterion of favourable for the speaker, item (a) in the list of axioms.

1.2. >nat (absolutive, ergative) / case of agent

I.e., an absolutive agent is more natural than an ergative agent. – The absolutive is zero coded and the ergative is not zero coded (Mayerthaler et al. 1998: 102). The absolutive is more natural according to the criterion of least effort, item (b) in the list of axioms.

2. The rules of chiastic alignment:

2.1. value A tends to associate with value D,

2.2. value B tends to associate with value C.

3. The consequences:

If a language distinguishes between +referential and –referential patients such that one is accompanied by the ergative case of the agent and the other is accompanied by the absolutive case of the agent, then it is the +referential patient that tends to be accompanied by the ergative case of the agent and it is the –referential patient that tends to be accompanied by the absolutive case of the agent. Q.E.D. (The reverse situation is not expected.)

(3) = H&T (38). Tongan. The ergative clause takes a totally affected patient, whereas the antipassive clause takes a partially affected patient.

<i>Na'e kai-i</i>	<i>'a</i>	<i>e</i>	<i>ika</i>	<i>'e</i>	<i>he</i>	<i>tamisi'i.</i>
PAST eat-TRANS	ABS	DEF	fish	ERG	the	boy
'The boy ate the fish.'						

<i>Na'e</i>	<i>kai</i>	'a	e	<i>tamisi'i</i>	'i	<i>he</i>	<i>ika.</i>
PAST	eat	ABS	DEF	boy	OBL	the	fish

'The boy ate some of the fish.'

Deduction (3i) treats the relationship between the type of patient and the case of the agent. Deduction (3ii) treats the relationship between the type of patient and the case of the patient.

(3i) The two variants: partially and totally affected patients. – The patient of the latter example is demoted to an oblique case. The construction is strongly detransitivized. Hence deduction (3i) is not limited to the unnatural environment “transitivity” and chiastic alignment is not indicated.

1. The assumptions of Natural Syntax:

1.1. >nat (partially, totally) / affected patient

I.e., a partially affected patient is more natural than a totally affected patient. – A totally affected patient has a more salient referent (is likely to be foregrounded); it is therefore in the greater interest of the hearer (decoder) and must be mentioned in slot B of the scale. According to the criterion of favourable for the hearer, item (a) in the list of axioms.

1.2. >nat (absolutive, ergative) / case of agent

I.e., an absolutive agent is more natural than an ergative agent. – The absolutive is zero coded and the ergative is not zero coded (Mayerthaler et al. 1998: 102). The absolutive is more natural according to the criterion of least effort, item (b) in the list of axioms.

2. The rules of parallel alignment:

2.1. value A tends to associate with value C,

2.2. value B tends to associate with value D.

3. The consequences:

If a language distinguishes between partially and totally affected patients such that one patient combines with an absolutive agent and the other patient combines with an ergative agent, then it is the partially affected patient that tends to combine with an absolutive agent and it is the totally affected patient that tends to combine with an ergative agent. Q.E.D. (The reverse situation is not expected.)

4. Note. On the connection between foregrounding and components of transitivity, see H&T (279 ff.).

(3ii) The two variants: partially and totally affected patients. – The deduction proceeds in the unnatural environment “patient” and hence requires chiastic alignment. The unnatural environment is culled from the scale >nat (agent, patient) supported by the circumstance that the speaker (the centre of communication) is usually the agent (in the spirit of Mayerthaler 1981: 13).

In spite of the special role of the patient in ergative languages (as opposed to accusative languages), the patient keeps its slot B of the scale even in ergative languages. Because naturalness scales are presupposed to reflect the activities of the

human brain, naturalness scales cannot assume different shapes in dependence on the language type (the language type does not co-vary with the activities of the human brain).

1. The assumptions of Natural Syntax:

1.1. >nat (partially, totally) / affected patient

I.e., a partially affected patient is more natural than a totally affected patient. – A totally affected patient has a more salient referent (is likely to be foregrounded); it is therefore in the greater interest of the hearer (decoder) and must be mentioned in slot B of the scale. According to the criterion of favourable for the hearer, item (a) in the list of axioms.

1.2. >nat (absolutive, oblique) / patient

I.e., an absolutive case is more natural than an oblique case. – The absolutive is zero coded, and an oblique case much less often. The absolutive is more natural according to the criterion of least effort, item (b) in the list of axioms.

2. The rules of chiasitic alignment:

2.1. value A tends to associate with value D,

2.2. value B tends to associate with value C.

3. The consequences:

If a language distinguishes between partially and totally affected patients such that one patient takes an oblique case and the other patient takes the absolutive case, then it is the partially affected patient that tends to take an oblique case and it is the totally affected patient that tends to take the absolutive case. Q.E.D. (The reverse situation is not expected.)

(4) = H&T (52). Samoan. The antipassive and ergative constructions. The contrast between durative and punctual action is expressed through the contrast between (i) the agent in the absolutive and ergative case, and (ii) the oblique patient and the patient next to the verb.

<i>Sā</i>	<i>manatu</i>	<i>le</i>	<i>tama</i>	<i>i</i>	<i>le</i>	<i>teine.</i>
TENSE	think	the	boy	OBL	the	girl

‘The boy thought about the girl.’

<i>Sā</i>	<i>manatu-a</i>	<i>le</i>	<i>teine</i>	<i>e</i>	<i>le</i>	<i>tama.</i>
TENSE	think-TRANS	the	girl	ERG	the	boy

‘The boy remembered the girl.’

(4i) The two variants: durative and punctual acts. – The patient of the former (= antipassive) clause is demoted to an oblique case. The construction is strongly detransitivized. Thus deduction (4i) is not limited to the unnatural environment “transitivity” and chiasitic alignment is not indicated.

1. The assumptions of Natural Syntax:

1.1. >nat (durative, punctual) / act

I.e., a durative act is more natural than a punctual act. – The referent of a punctual act is more salient (is likely to be foregrounded); it is therefore in the greater interest of the hearer (decoder) and must be mentioned in slot B of the scale. According to the criterion of favourable for the hearer, item (a) in the list of axioms.

1.2. >nat (absolutive, ergative) / case of agent

I.e., an absolutive agent is more natural than an ergative agent. – The absolutive is zero coded and the ergative is not zero coded (Mayerthaler et al. 1998: 102). The absolutive is more natural according to the criterion of least effort, item (b) in the list of axioms.

2. The rules of parallel alignment:

2.1. value A tends to associate with value C,

2.2. value B tends to associate with value D.

3. The consequences:

If a language distinguishes between durative and punctual acts such that one act takes the absolutive as the case of the agent and the other act takes the ergative as the case of the agent, then it is the durative act that tends to take the absolutive as the case of the agent and it is the punctual act that tends to take the ergative as the case of the agent. Q.E.D. (The reverse situation is not expected.)

(4ii) The two variants: durative and punctual acts. – The deduction proceeds in the unnatural environment “patient” and hence requires chiasitic alignment.

1. The assumptions of Natural Syntax:

1.1. >nat (durative, punctual) / act

I.e., a durative act is more natural than a punctual act. – The referent of a punctual act is more salient (is likely to be foregrounded); it is therefore in the greater interest of the hearer (decoder) and must be mentioned in slot B of the scale. According to the criterion of favourable for the hearer, item (a) in the list of axioms.

1.2. >nat (+, -) / movement of patient to the left

I.e., movement of the patient to the left is more natural than its non-movement. – According to the process criterion, item (f) in the list of axioms.

2. The rules of chiasitic alignment:

2.1. value A tends to associate with value D,

2.2. value B tends to associate with value C.

3. The consequences:

If a language distinguishes between durative and punctual acts such that one act is combined with the movement of the patient to the left and the other act is not combined with such movement, then it is the punctual act that tends to be combined with the movement of the patient to the left and it is the durative act that tends not to be combined with the movement of the patient to the left. Q.E.D. (The reverse situation is not expected.)

(5) = H&T (54). Kabardian (NW Caucasian). The ergative and antipassive constructions. The patient of the ergative construction is totally affected, whereas the patient of the antipassive construction is partially affected.

<i>ħe-m</i>	<i>q^w'ipsħe-r</i>	<i>je-dzaq'e.</i>
dog-ERG	bone-NOM	bite
<i>ħe-r</i>	<i>q^w'ipsħe-m</i>	<i>je-w-dzaq'e.</i>
dog-NOM	bone-ERGbite	
'The dog is biting the bone.'		

The antipassive clause is weakly detransitivized: the agent assumes the nominative case and the patient assumes the ergative case. The following deductions (5i-ii) proceed in the unnatural environment “transitivity” and consequently require chiasitic alignment.

(5i) The two variants: nominative and ergative.

1. The assumptions of Natural Syntax:

1.1. >nat (nominative, ergative) / agent

I.e., a nominative is more natural than an ergative. – In ergative languages the nominative is usually zero coded and is natural according to the criterion of least effort, item (b) in the list of axioms.

1.2. >nat (nominative, ergative) / patient

I.e., a nominative is more natural than an ergative. – In ergative languages the nominative is usually zero coded and is natural according to the criterion of least effort, item (b) in the list of axioms.

2. The rules of chiasitic alignment:

2.1. value A tends to associate with value D,

2.2. value B tends to associate with value C.

3. The consequences:

If a language distinguishes between nominative and ergative agents such that one agent combines with a nominative patient and the other agent combines with an ergative patient, then it is the nominative agent that tends to combine with an ergative patient and it is the ergative agent that tends to combine with a nominative patient. Q.E.D.

(5ii) The two variants: partially and totally affected patients.

1. The assumptions of Natural Syntax:

1.1. >nat (partially, totally) / affected patient

I.e., a partially affected patient is more natural than a totally affected patient. – A totally affected patient has a more salient referent (is likely to be foregrounded); it is therefore in the greater interest of the hearer (decoder) and must be mentioned

in slot B of the scale. According to the criterion of favourable for the hearer, item (a) in the list of axioms.

1.2. >nat (nominative, ergative) / patient

I.e., a nominative is more natural than an ergative. – In ergative languages the nominative is usually zero coded and is natural according to the criterion of least effort, item (b) in the list of axioms.

2. The rules of chiastic alignment:

2.1. value A tends to associate with value D,

2.2. value B tends to associate with value C.

3. The consequences:

If a language distinguishes between partially and totally affected patients such that one kind of patient assumes the nominative case and the other kind of patient assumes the ergative case, then it is the partially affected patient that tends to assume the ergative case and it is the totally affected patient that tends to assume the nominative case. Q.E.D. (The reverse situation is not expected.)

(6) = H&T (55). Bzhedukh (West Circassian dialect). The ergative and antipassive constructions. In the antipassive the patient is less completely affected by the action.

<i>č''aaλa-m</i>	<i>č'əg°-əʀ</i>	<i>ya-z°a.</i>
boy-ERG	field-ABS	3sg(-3sg)-plows
‘The boy is plowing the field.’		

<i>č''aaλa-r</i>	<i>č'əg°-əʀ</i>	<i>ya-z°a.</i>
boy-ABS	field-OBL	(-3sg)-plows
‘The boy is trying to plow the field’; OR		
‘The boy is doing some plowing in the field.’		

(6i) The two variants: partially and totally affected patients. – The patient of the latter (= antipassive) clause is demoted to an oblique case. The construction is strongly detransitivized. Thus deduction (6i) is not limited to the unnatural environment “transitivity” and chiastic alignment is not indicated.

1. The assumptions of Natural Syntax:

1.1. >nat (partially, totally) / affected patient

I.e., a partially affected patient is more natural than a totally affected patient. – A totally affected patient has a more salient referent (is likely to be foregrounded); it is therefore in the greater interest of the hearer (decoder) and must be mentioned in slot B of the scale. According to the criterion of favourable for the hearer, item (a) in the list of axioms.

1.2. >nat (absolutive, ergative) / agent

I.e., an absolutive agent is more natural than an ergative agent. – The absolutive is zero coded and the ergative is not zero coded (Mayerthaler et al. 1998: 102).

The absolutive is more natural according to the criterion of least effort, item (b) in the list of axioms.

2. The rules of parallel alignment:

2.1. value A tends to associate with value C,

2.2. value B tends to associate with value D.

3. The consequences:

If a language distinguishes between partially and totally affected patients such that one combines with an absolutive agent and the other combines with an ergative agent, then it is the partially affected patient that tends to combine with an absolutive agent and it is the totally affected patient that tends to combine with an ergative agent. Q.E.D. (The reverse situation is not expected.)

(gii) The two variants: partially and totally affected patients. – The deduction proceeds in the unnatural environment “patient” and hence requires chiastic alignment.

1. The assumptions of Natural Syntax:

1.1. >nat (partially, totally) / affected patient

I.e., a partially affected patient is more natural than a totally affected patient. – A totally affected patient has a more salient referent (is likely to be foregrounded); it is therefore in the greater interest of the hearer (decoder) and must be mentioned in slot B of the scale. According to the criterion of favourable for the hearer, item (a) in the list of axioms.

1.2. >nat (absolutive, oblique) / patient

I.e., the absolutive case is more natural than an oblique case. – The absolutive is usually zero coded, and an oblique case much less often. The absolutive is more natural according to the criterion of least effort, item (b) in the list of axioms.

2. The rules of chiastic alignment:

2.1. value A tends to associate with value D,

2.2. value B tends to associate with value C.

3. The consequences:

If a language distinguishes between partially and totally affected patients such that one patient assumes the absolutive case and the other patient assumes an oblique case, then it is the partially affected patient that tends to assume an oblique case and it is the totally affected patient that tends to assume the absolutive case. Q.E.D. (The reverse situation is not expected.)

(7) = H&T (56). Avar (NE Caucasian). The ergative and antipassive constructions. The patient of the ergative construction is referential, whereas the patient of the antipassive is not referential.

Hez-nux-habuleb
they(ERG)-road(NOM)-making

bugo.
are

Hel-nux *habulel rugo.*
 they(NOM)-road(NOM) making are
 ‘They are making a road.’

The antipassive clause is weakly detransitivized: the agent and the patient assume the nominative case. The following deductions (7i–ii) proceed in the unnatural environment “transitivity” and consequently require chiasitic alignment.

(7i) The two variants: +/-referential patient.

1. The assumptions of Natural Syntax:

1.1. >nat (+, -) / referential patient

I.e., +referential is more natural than -referential. – The speaker (as the centre of communication) is +referential (in the spirit of Mayerthaler 1981: 13). According to the criterion of favourable for the speaker, item (a) in the list of axioms.

1.2. >nat (nominative, ergative) / agent

I.e., a nominative is more natural than an ergative. – In ergative languages the nominative is usually zero coded and is natural according to the criterion of least effort, item (b) in the list of axioms.

2. The rules of chiasitic alignment:

2.1. value A tends to associate with value D,

2.2. value B tends to associate with value C.

3. The consequences:

If a language distinguishes between +referential and -referential patients such that one combines with a nominative agent and the other combines with an ergative agent, then it is the +referential patient that tends to combine with an ergative agent and it is the -referential patient that tends to combine with a nominative agent. Q.E.D. (The reverse situation is not expected.)

(7ii) The two variants: +/-patient incorporated into the verb.

1. The assumptions of Natural Syntax:

1.1. >nat (+, -) / incorporated patient

I.e., an incorporated patient is more natural than a non-incorporated patient. – According to the criterion of integration into construction, item (c) in the list of axioms.

1.2. >nat (nominative, ergative) / agent

I.e., a nominative is more natural than an ergative. – In ergative languages the nominative is usually zero coded and is natural according to the criterion of least effort, item (b) in the list of axioms.

2. The rules of chiasitic alignment:

2.1. value A tends to associate with value D,

2.2. value B tends to associate with value C.

3. The consequences:

If a language distinguishes between a patient incorporated into the verb and a patient not incorporated such that one kind of patient combines with a nominative

agent and the other kind of patient combines with an ergative agent, then it is the incorporated patient that tends to combine with an ergative agent and it is the non-incorporated patient that tends to combine with a nominative agent. Q.E.D. (The reverse situation is not expected.)

(8) = H&T (57). Eskimo. The ergative and antipassive constructions. The ergative construction signals a “given” patient, whereas the antipassive signals a “new” patient.

<i>Inu-up</i>	<i>qimmiq-∅</i>	<i>taku-v-a-a.</i>
person-ERG	dog-ABS	see-INDIC-TRANS-3/3
‘The/A person saw the dog.’		

<i>Inuk-∅</i>	<i>qimmir-MIK</i>	<i>taku-v-UQ-∅.</i>
person-ABS	dog-OBL	see-INDIC-INTR-3
‘The/A person saw a dog.’		

(8i) The two variants: given and new patients. – The patient of the latter (= antipassive) clause is demoted to an oblique case. The construction is strongly detransitivized. Thus deduction (8i) is not limited to the unnatural environment “transitivity” and chiasitic alignment is not indicated.

1. The assumptions of Natural Syntax:

1.1. >nat (given, new) / patient

I.e., a given patient is more natural than a new patient. – The hearer is more interested in a new patient and therefore the new patient must be mentioned in slot B of the scale. According to the criterion of favourable for the hearer, item (a) in the list of axioms.

1.2. >nat (absolute, ergative) / agent

I.e., an absolute agent is more natural than an ergative agent. – The absolute is zero coded and the ergative is not zero coded (Mayerthaler et al. 1998: 102). The absolute is more natural according to the criterion of least effort, item (b) in the list of axioms.

2. The rules of parallel alignment:

- 2.1. value A tends to associate with value C,
- 2.2. value B tends to associate with value D.

3. The consequences:

If a language distinguishes between given and new patients such that one of them combines with an absolute agent and the other combines with an ergative agent, then it is the given patient that tends to combine with an absolute agent and it is the new patient that tends to combine with an ergative agent. Q.E.D. (The reverse situation is not expected.)

(8ii) The two variants: given and new patients. – The deduction proceeds in the unnatural environment “patient”.

1. The assumptions of Natural Syntax:

1.1. >nat (given, new) / patient

I.e., a given patient is more natural than a new patient. – The hearer is more interested in a new patient and therefore the new patient must be mentioned in slot B of the scale. According to the criterion of favourable for the hearer, item (a) in the list of axioms.

1.2. >nat (absolutive, oblique) / patient

I.e., an absolutive case is more natural than an oblique case. – The absolutive is usually zero coded, an oblique case much less often. The absolutive is more natural according to the criterion of least effort, item (b) in the list of axioms.

2. The rules of chiastic alignment:

2.1. value A tends to associate with value D,

2.2. value B tends to associate with value C.

3. The consequences:

If a language distinguishes between given and new patients such that one of them assumes the absolutive form and the other assumes an oblique form, then it is the given patient that tends to assume an oblique form and it is the new patient that tends to assume the absolutive form. Q.E.D. (The reverse situation is not expected.)

(9) = H&T (59). Samoan. The ergative and antipassive constructions. Less active verbs elicit an antipassive construction. More active verbs require an ergative construction.

<i>Na</i>	<i>fasi</i>	<i>e</i>	<i>le</i>	<i>tama</i>	<i>le</i>	<i>teine.</i>
TENSE	hit	ERG	the	boy	the	girl

‘The boy hit the girl.’

<i>Na</i>	<i>va'ai</i>	<i>le</i>	<i>tama</i>	<i>i</i>	<i>le</i>	<i>teine.</i>
TENSE	see	the	boy	OBL	the	girl

‘The boy saw the girl.’

(9i) The two variants: the verbs ‘see’ and ‘hit’. – The patient of the latter (= antipassive) clause is demoted to an oblique case. The construction is strongly detransitivized. Thus deduction (9i) is not limited to the unnatural environment “transitivity” and chiastic alignment is not indicated.

1. The assumptions of Natural Syntax:

1.1. >nat (see, hit)

I.e., ‘see’ is more natural than ‘hit’. – The action of hitting is much more salient than the “action” of seeing. The former action is therefore in the interest of the hearer (decoder) and must be mentioned in slot B of the scale. According to the criterion of favourable for the hearer, item (a) in the list of axioms.

1.2. >nat (unmarked, ergative) / agent

I.e., an unmarked agent is more natural than an ergative agent. – According to the criterion of least effort, item (b) in the list of axioms.

2. The rules of parallel alignment:

2.1. value A tends to associate with value C,

2.2. value B tends to associate with value D.

3. The consequences:

If a language distinguishes between ‘see’ and ‘hit’ such that one verb combines with an unmarked agent and the other verb combines with an ergative agent, then it is ‘see’ that tends to combine with an unmarked agent and it is ‘hit’ that tends to combine with an ergative agent. Q.E.D. (The reverse situation is not expected.)

(9ii) The two variants: the verbs ‘see’ and ‘hit’. – The deduction proceeds in the unnatural environment “patient”.

1. The assumptions of Natural Syntax:

1.1. >nat (see, hit)

I.e., ‘see’ is more natural than ‘hit’. – The action of hitting is much more salient than the “action” of seeing. The former action is therefore in the interest of the hearer (decoder) and must be mentioned in slot B of the scale. According to the criterion of favourable for the hearer, item (a) in the list of axioms.

1.2. >nat (unmarked, oblique) / patient

I.e., an unmarked case is more natural than an oblique case. – According to the criterion of least effort, item (b) in the list of axioms.

2. The rules of chiasitic alignment:

2.1. value A tends to associate with value D,

2.2. value B tends to associate with value C.

If a language distinguishes between ‘see’ and ‘hit’ such that one verb combines with an unmarked patient and the other verb combines with an oblique patient, then it is ‘see’ that tends to combine with an oblique patient and it is ‘hit’ that tends to combine with an unmarked patient. Q.E.D. (The reverse situation is not expected.)

(10) = H&T (60). Adyghe (NW Caucasian). The ergative and antipassive constructions. In the antipassive construction the patient is partially affected. In the ergative construction the patient is totally affected.

<i>Jewedzak^w'e-r</i>	<i>š'ale-m</i>	<i>jewišijaš.</i>
teacher-NOM	youth-ERG	admonished

<i>Jewedzak^w'e-m</i>	<i>š'ale-r</i>	<i>jīwišijaš.</i>
teacher-ERG	youth-nom	admonished

‘The teacher admonished the youth.’

The antipassive clause is weakly detransitivized: the agent assumes the nominative case and the patient assumes the ergative case. The following deductions (10i–ii)

proceed in the unnatural environment “transitivity” and consequently require chiastic alignment.

(10i) The two variants: nominative and ergative.

1. The assumptions of Natural Syntax:

1.1. >nat (nominative, ergative) / agent

I.e., a nominative is more natural than an ergative. – In ergative languages the nominative is usually zero coded and is natural according to the criterion of least effort, item (b) in the list of axioms.

1.2. >nat (nominative, ergative) / patient

I.e., a nominative is more natural than an ergative. – In ergative languages the nominative is usually zero coded and is natural according to the criterion of least effort, item (b) in the list of axioms.

2. The rules of chiastic alignment:

2.1. value A tends to associate with value D,

2.2. value B tends to associate with value C.

3. The consequences:

If a language distinguishes between nominative and ergative agents such that one agent combines with a nominative patient and the other agent combines with an ergative patient, then it is the nominative agent that tends to combine with an ergative patient and it is the ergative agent that tends to combine with a nominative patient. Q.E.D.

(10ii) The two variants: partially and totally affected patients.

1. The assumptions of Natural Syntax:

1.1. >nat (partially, totally) / affected patient

I.e., a partially affected patient is more natural than a totally affected patient. – A totally affected patient has a more salient referent (is likely to be foregrounded); it is therefore in the greater interest of the hearer (decoder) and must be mentioned in slot B of the scale. According to the criterion of favourable for the hearer, item (a) in the list of axioms.

1.2. >nat (nominative, ergative) / patient

I.e., a nominative is more natural than an ergative. – In ergative languages the nominative is usually zero coded and is natural according to the criterion of least effort, item (b) in the list of axioms.

2. The rules of chiastic alignment:

2.1. value A tends to associate with value D,

2.2. value B tends to associate with value C.

3. The consequences:

If a language distinguishes between partially and totally affected patients such that one kind of patient assumes the nominative case and the other kind of patient assumes the ergative case, then it is the partially affected patient that tends to

assume the ergative case and it is the totally affected patient that tends to assume the nominative case. Q.E.D. (The reverse situation is not expected.)

(11) = H&T (62). Hindi. Present/imperfective. Transitive and intransitive constructions.

Māā roogii laRkee-kee liyee khaanaa pakaatii hai.
mother sick boy-OBL for food cooking PRES
'The mother cooks food for the sick boy.'

Aurat saheeliyōḍ-kee saath kuē-kee paas booltii hai.
woman friends-OBL with well-OBL at speaking PRES.
'The woman talks with her friends near the well.'

The two variants: (within the present/imperfective) +/-ergative case as agent.

1. The assumptions of Natural Syntax:

1.1. >nat (unmarked, ergative) / agent

I.e., an unmarked agent is more natural than an ergative agent. – According to the criterion of least effort, item (b) in the list of axioms.

1.2. >nat (+, -) / acceptable

I.e., what is more acceptable is more natural than what is less acceptable. – This is the very acceptability criterion, item (g) in the list of axioms.

2. The rules of parallel alignment:

2.1. value A tends to associate with value C,

2.2. value B tends to associate with value D.

3. The consequences:

If a language distinguishes (within the present/imperfective) between an ergative and an unmarked agent such that one agent is acceptable and the other agent is not acceptable, then it is the unmarked agent that tends to be acceptable and it is the ergative agent that tends not to be acceptable. Q.E.D. (The reverse situation is not expected.)

(12) = H&T (63). Hindi. Past/imperfective. +/-ergative case as agent.

Gariib aadmii mandir-kee saamnee phuul beectaa tha.
poor man temple-OBL before flower selling(MASC) PAST(MASC)
'The poor man used to sell flowers in front of the temple.'

Aurtēē tīrth-sthaan-koo jaatii thī.
women holy-place-to going(FEM) PAST(FEM.PL)
'The women used to go to a holy place.'

The same deduction as under (11), q.v.

(13) = H&T (64). Hindi. Past/perfective. +/-ergative case as agent.

Kisaan-nee bail-kii oor chaRii phēžkii.
 farmer-ERG ox-OBL at stick(FEM) threw(FEM)
 ‘The farmer threw a stick at the bullock.’

Billii kužē-mžē girii.
 cat(FEM) well-in fell(FEM)
 ‘The cat fell into the well.’

The two variants: (within past/perfective) +/-ergative case as agent. – The deduction proceeds in the unnatural environment “perfective aspect”. See 4. Note below.

1. The assumptions of Natural Syntax:

1.1. >nat (unmarked, ergative) / agent

I.e., an unmarked agent is more natural than an ergative agent. – According to the criterion of least effort, item (b) in the list of axioms.

1.2. >nat (+, -) / acceptable

I.e., what is more acceptable is more natural than what is less acceptable. – This is the very acceptability criterion, item (g) in the list of axioms.

2. The rules of chiasitic alignment:

2.1. value A tends to associate with value D,

2.2. value B tends to associate with value C.

3. The consequences:

If a language distinguishes (within past/perfective) between ergative and unmarked agents such that one agent is acceptable and the other agent is not acceptable, then it is the unmarked agent that tends not to be acceptable and it is the ergative agent that tends to be acceptable. Q.E.D. (The reverse situation is not expected.)

4. Note. The unnatural environment has been culled from the scale >nat (imperfective, perfective) / aspect, explained in deduction (15i) below.

(14) = H&T (65). Georgian. Certain classes of verbs. Case-marking is non-ergative in the present but ergative in the aorist.

Glexi tesavs marcvebs.
 farmer(NOM) he sows it(PRES) seeds(DAT)
 ‘The farmer is sowing seeds.’

Glexma datesa marcvebi.
 farmer(ERG) he sowed it(AOR) seeds(NOM)
 ‘The farmer sowed seeds.’

(14i) The two variants: the present and the aorist. – The patient of the former (= antipassive) clause is demoted to an oblique case. The construction is strongly detransitivized. Thus deduction (14i) is not limited to the unnatural environment “transitivity” and chiasitic alignment is not indicated.

1. The assumptions of Natural Syntax:

1.1. >nat (present, aorist)

I.e., the present is more natural than the aorist. – In many languages the present is zero coded and therefore it is more natural according to the criterion of least effort, item (b) in the list of axioms.

1.2. >nat (nominative, ergative) / agent

I.e., a nominative is more natural than an ergative. – In ergative languages the nominative is usually zero coded and is natural according to the criterion of least effort, item (b) in the list of axioms.

2. The rules of parallel alignment:

2.1. value A tends to associate with value C,

2.2. value B tends to associate with value D.

3. The consequences:

If a language distinguishes between the present and the aorist such that one verb form combines with a nominative agent and the other verb form combines with an ergative agent, then it is the present that tends to combine with a nominative agent and it is the aorist that tends to combine with an ergative agent. Q.E.D. (The reverse situation is not expected.)

(14ii) The two variants: the present and the aorist. – The deduction proceeds in the unnatural environment “patient”.

1. The assumptions of Natural Syntax:

1.1. >nat (present, aorist)

I.e., the present is more natural than the aorist. – In many languages the present is zero coded and therefore it is more natural according to the criterion of least effort, item (b) in the list of axioms.

1.2. >nat (nominative, dative) / patient

I.e., a nominative is more natural than a dative. – In ergative languages the nominative is usually zero coded and is natural according to the criterion of least effort, item (b) in the list of axioms.

2. The rules of chiastic alignment:

2.1. value A tends to associate with value D,

2.2. value B tends to associate with value C.

3. The consequences:

If a language distinguishes between the present and the aorist such that one verb form combines with a dative patient and the other verb form combines with a nominative patient, then it is the present that tends to combine with a dative patient and it is the aorist that tends to combine with a nominative patient. Q.E.D. (The reverse situation is not expected.)

(15) = H&T (66). Samoan. The ergative construction signals perfective aspect, and the antipassive signals imperfective aspect.

<i>Na</i>	<i>va'ai</i>	<i>le</i>	<i>tama</i>	<i>i</i>	<i>le</i>	<i>i'a.</i>
TENSE	look at	the	boy	OBL	the	fish

'The boy was looking at the fish.'

<i>Na</i>	<i>va'ai-a</i>	<i>e</i>	<i>le</i>	<i>tama</i>	<i>le</i>	<i>i'a.</i>
TENSE	look at-TRANS	ERG	the	boy	the	fish

'The boy spotted the fish.'

(15i) The two variants: the perfective and imperfective aspects. – The patient of the former (= antipassive) clause is demoted to an oblique case. The construction is strongly detransitivized. Thus deduction (15i) is not limited to the unnatural environment “transitivity” and chiasitic alignment is not indicated.

1. The assumptions of Natural Syntax:

1.1. >nat (imperfective, perfective) / aspect

I.e., the imperfective verbal aspect is more natural than the perfective verbal aspect. – It is easier to perceive a verbal act as whole in the perfective than in the imperfective verbal aspect. This circumstance is presumably in the interest of the hearer (decoder) and therefore the perfective verbal aspect must be mentioned in slot B of the scale. According to the criterion of favourable for the hearer, item (a) in the list of axioms. Variants of scale 1.2 have been in fashion at least seventy years.

1.2. >nat (unmarked, ergative) / agent

I.e., an unmarked agent is more natural than an ergative agent. – An unmarked agent is zero coded and thus more natural according to the criterion of least effort, item (b) in the list of axioms.

2. The rules of parallel alignment:

2.1. value A tends to associate with value C,

2.2. value B tends to associate with value D.

3. The consequences:

If a language distinguishes between perfective and imperfective aspects such that one combines with an ergative agent and the other combines with an unmarked agent, then it is the perfective aspect that tends to combine with an ergative agent and it is the imperfective aspect that tends to combine with an unmarked agent. Q.E.D. (The reverse situation is not expected.)

(15ii) The two variants: the perfective and imperfective aspects. – The deduction proceeds in the unnatural environment “patient”.

1. The assumptions of Natural Syntax:

1.1. >nat (imperfective, perfective) / aspect

I.e., the imperfective verbal aspect is more natural than the perfective verbal aspect. – It is easier to perceive a verbal act as whole in the perfective than in the imperfective verbal aspect. This circumstance is presumably in the interest of the hearer (decoder) and therefore the perfective verbal aspect must be mentioned in slot B of the scale.

According to the criterion of favourable for the hearer, item (a) in the list of axioms. Variants of scale 1.2 have been in fashion at least seventy years.

1.2. >nat (unmarked, oblique) / patient

I.e., an unmarked patient is more natural than an oblique patient. – An unmarked patient is zero coded and thus more natural according to the criterion of least effort, item (b) in the list of axioms.

2. The rules of chiastic alignment:

2.1. value A tends to associate with value D,

2.2. value B tends to associate with value C.

3. The consequences:

If a language distinguishes between perfective and imperfective aspects such that one combines with an unmarked patient and the other combines with an oblique patient, then it is the perfective aspect that tends to combine with an unmarked patient and it is the imperfective aspect that tends to combine with an oblique patient. Q.E.D. (The reverse situation is not expected.)

(16) = H&T (67). Kalkatungu (W. Queensland). The ergative and antipassive constructions. There is a correlation between case-marking and aspect.

<i>Kupaḡuru-ḡu</i>	<i>caa</i>	<i>kalpin</i>	<i>lai-ḡa.</i>
old man-ERG	here	young man	hit-PAST

‘The old man hit the young man.’

<i>Kupaḡuru</i>	<i>caa</i>	<i>kalpin-ku</i>	<i>lai-miḡa.</i>
old man	here	young man-DAT	hit-IMPF

‘The old man is hitting the young man.’

(16i) The two variants: the perfective and imperfective aspects. – The patient of the latter (= antipassive) clause is demoted to an oblique case. The construction is strongly detransitivized. Thus deduction (16i) is not limited to the unnatural environment “transitivity” and chiastic alignment is not indicated.

1. The assumptions of Natural Syntax:

1.1. >nat (imperfective, perfective) / aspect

I.e., the imperfective verbal aspect is more natural than the perfective verbal aspect. – It is easier to perceive a verbal act as whole in the perfective than in the imperfective verbal aspect. This circumstance is presumably in the interest of the hearer (decoder) and therefore the perfective verbal aspect must be mentioned in slot B of the scale. According to the criterion of favourable for the hearer, item (a) in the list of axioms. Variants of scale 1.2 have been in fashion at least seventy years.

1.2. >nat (unmarked, ergative) / agent

I.e., an unmarked agent is more natural than an ergative agent. – An unmarked agent is zero coded and thus more natural according to the criterion of least effort, item (b) in the list of axioms.

2. The rules of parallel alignment:
 - 2.1. value A tends to associate with value C,
 - 2.2. value B tends to associate with value D.
3. The consequences:

If a language distinguishes between perfective and imperfective aspects such that one combines with an ergative agent and the other combines with an unmarked agent, then it is the perfective aspect that tends to combine with an ergative agent and it is the imperfective aspect that tends to combine with an unmarked agent. Q.E.D. (The reverse situation is not expected.)

(16ii) The two variants: the perfective and imperfective aspects. – The deduction proceeds in the unnatural environment “patient”.

1. The assumptions of Natural Syntax:
 - 1.1. >nat (imperfective, perfective) / aspect

I.e., the imperfective verbal aspect is more natural than the perfective verbal aspect. – It is easier to perceive a verbal act as whole in the perfective than in the imperfective verbal aspect. This circumstance is presumably in the interest of the hearer (decoder) and therefore the perfective verbal aspect must be mentioned in slot B of the scale. According to the criterion of favourable for the hearer, item (a) in the list of axioms. Variants of scale 1.2 have been in fashion at least seventy years.

- 1.2. >nat (unmarked, dative) / patient

I.e., an unmarked patient is more natural than a dative patient. – According to the criterion of least effort, item (b) in the list of axioms.

2. The rules of chiastic alignment:
 - 2.1. value A tends to associate with value D,
 - 2.2. value B tends to associate with value C.

3. The consequences:

If a language distinguishes between perfective and imperfective aspects such that one combines with a dative patient and the other combines with an unmarked patient, then it is the perfective aspect that tends to combine with an unmarked patient and it is the imperfective aspect that tends to combine with a dative patient. Q.E.D. (The reverse situation is not expected.)

(17) = H&T (68). Yukulta (Queensland). The ergative and antipassive constructions. The antipassive is used, *inter alia*, when the agent and the patient do not obey the Agency Hierarchy; for instance, when the agent is the 3rd person and the patient is the 1st or 2nd person.

The antipassive is used in non-accomplished non-complete environments. The ergative construction is used elsewhere.

The patient of the antipassive clause is demoted to an oblique case. The construction is strongly detransitivized. Thus deductions (17i–ii) are not limited to the unnatural environment “transitivity” and chiastic alignment is not indicated.

(17i) The two variants: ergative and antipassive constructions.

1. The assumptions of Natural Syntax:

1.1. >nat (antipassive, ergative) / construction

I.e., the antipassive is more natural than the ergative construction. – The antipassive often has some features of intransitive constructions, and these are more natural than transitive constructions, to which ergative constructions invariably pertain. (The naturalness of intransitive constructions is based on the circumstance that they code fewer participants than transitive constructions.) According to the criterion of least effort, item (b) in the list of axioms.

1.2. >nat (-, +) / implementation of Agency Hierarchy

I.e., constructions disobeying the Agency Hierarchy are more natural than constructions obeying that hierarchy. – Because the Agency Hierarchy constitutes the usual state of affairs, the implementation of the Agency Hierarchy is more expected by the hearer (the decoder) than the non-implementation of that hierarchy. According to the criterion of favourable for the hearer, item (a) in the list of axioms.

2. The rules of parallel alignment:

2.1. value A tends to associate with value C,

2.2. value B tends to associate with value D.

3. The consequences:

If a language distinguishes between ergative and antipassive constructions such that one implements the Agency Hierarchy and the other does not implement that hierarchy, then it is the ergative construction that tends to implement the Agency Hierarchy and it is the antipassive that tends not to implement that hierarchy. Q.E.D. (The reverse situation is not expected.)

(17ii) The two variants: ergative and antipassive constructions.

1. The assumptions of Natural Syntax:

1.1. >nat (antipassive, ergative) / construction

I.e., the antipassive is more natural than the ergative construction. – The antipassive often has some features of intransitive constructions, and these are more natural than transitive constructions, to which ergative constructions invariably pertain. (The naturalness of intransitive constructions is based on the circumstance that they code fewer participants than transitive constructions.) According to the criterion of least effort, item (b) in the list of axioms.

1.2. >nat (+, -) / non-accomplished non-complete environments

I.e., non-accomplished non-complete environments are more natural than “other” environments. – “Other” environments include accomplished and complete environments. These are in the special interest of the hearer and therefore must be mentioned in slot B of the scale. According to the criterion of favourable for the hearer, item (a) in the list of axioms.

2. The rules of parallel alignment:

2.1. value A tends to associate with value C,

2.2. value B tends to associate with value D.

3. The consequences:

If a language distinguishes between ergative and antipassive constructions such that one signals non-accomplished non-complete environments and the other signals “other” environments, then it is the antipassive that tends to signal non-accomplished non-complete environments and it is the ergative construction that tends to signal “other” environments. Q.E.D. (The reverse situation is not expected.)

CONCLUSION

The above illustration demonstrates that Natural Syntax is capable of predicting a significant amount of language situations, given a small number of presuppositions (i.e., the particular description of language data adopted, the choice of variants, the naturalness scales, the alignment rules) and a modest apparatus (namely the deduction format).

The development of Natural Syntax is to be continued exploiting as variegated language material as possible.

Abbreviations

ABS	absolute case
AOR	aorist
DAT	dative case
DEF	definiteness marker
ERG	ergative case
FEM	feminine
IMPF	imperfective aspect
INDIC	indicative mood
INTR	intransitive
MASC	masculine
NOM	nominative case
OBL	oblique case
PL	plural
PRES	present tense
TRANS	transitive

References

- ANDERSEN, Henning (1972) “Diphthongization.” *Language* 48, 11–50.
- Collins Cobuild English Grammar*. London: HarperCollins, 1990.
- CVETKO-OREŠNIK, Varja/Janez OREŠNIK (2007) “Natural Syntax: Three-value naturalness scales.” *Slovenski jezik/Slovene linguistic studies* 6, 235–249.
- DIXON, Robert M. W. (1994) *Ergativity*. Cambridge: Cambridge University Press.
- HAVERS, Wilhelm (1931) *Handbuch der erklärenden Syntax*. Heidelberg: Winter.

- HOPPER, Paul J./Sandra A. THOMPSON (1980) "Transitivity in grammar and discourse." *Language* 56, 251–299.
- MAYERTHALER, Willi (1981) *Morphologische Natürlichkeit*. Wiesbaden: Athenaion.
- MAYERTHALER, Willi/Günther FLIEDL/Christian WINKLER (1998) *Lexikon der natürlichkeits-theoretischen Syntax und Morphosyntax*. Tübingen: Stauffenburg.
- OREŠNIK, Janez (2007a) "Natural Syntax: Negation in English." *Poznań Studies in Contemporary Linguistics* 43, 97–111.
- OREŠNIK, Janez (2007b) "Natural syntax: the grammatical person of personal pronouns." *Sprachtypologie und Universalienforschung* 60, 293–313.
- OREŠNIK, Janez (2007c) "Natural syntax: English interrogative dependent clauses." *Razprave* 20 [Razred za filološke in literarne vede SAZU Ljubljana], 191–208.
- OREŠNIK, Janez (2007d) "Natural syntax: English dependent clauses." *Studia Anglica Posnaniensia* 43, 219–236.
- OREŠNIK, Janez (2007e) "Natural syntax: English interrogative main clauses." *Linguistica* 47, 35–48.
- OREŠNIK, Janez (2008) "Natural syntax: English relative clauses." *Poznań Studies in Contemporary Linguistics* 44, 61–101. <<http://versita.metapress.com/content/120709>>
- SADOCK, Jerrold M. (1980) "Noun incorporation in Greenlandic: A case of syntactic word formation." *Language* 56, 300–319.

Summary

TRANSITIVITY IN NATURAL SYNTAX: ERGATIVE LANGUAGES

The paper implements the framework of Natural Syntax and treats various phenomena bearing on transitivity using the language material of ergative languages. In each case one ergative and one antipassive constructions are compared, and certain properties of such pairs are predicted. It is new in the paper that it is necessary to distinguish less or more transitive antipassive constructions. In the more transitive ones the agent and the patient are coded with the ergative case, the absolutive case, the nominative case, or the patient is integrated (at least to some extent) into the corresponding verb. More transitive antipassive constructions and the corresponding ergative constructions remain transitive. Because transitivity represents an unnatural environment, the alignment of the corresponding naturalness values is chiastic. The remaining antipassive constructions are less transitive, so that any pair consisting of such a construction and of the corresponding ergative construction withdraws from the unnatural environment of transitivity, and hence the alignment of the corresponding naturalness values is parallel. Another unnatural environment is represented by the patient just in case that its syntactic, not semantic, properties are treated. Consequently the alignment of the corresponding naturalness values is chiastic. The paper discusses 18 ergative languages, mostly from the Caucasus and the Pacific Ocean.

Povzetek
PREHODNOST V NARAVNI SKLADNJI – ERGATIVNI JEZIKI

V okviru t.i. naravne skladnje se ob jezikovnem gradivu iz ergativnih jezikov obravnavajo različni pojavi, povezani s prehodnostjo. Vsakič se primerjata po ena ergativna in po ena protitrpna zgradba (mednarodno: antipasiv) ter se napovedujejo nekateri vidiki razmer v takih dvojicah. Novo je, da je treba pri protitrpnih zgradbah razlikovati med bolj in manj prehodnimi. Bolj prehodne so tiste, v katerih sta vršilec in prizadeto kodirana z enim izmed naslednjih sklonov: ergativ, absolutiv, nominativ; ali pa je prizadeto (vsaj v neki meri) včlenjeno v soodnosni glagol. Bolj prehodne protitrpne zgradbe in soodnosne ergativne zgradbe ostajajo v okviru prehodnosti; ker slednja tvori nenaravno okolje, je povezovanje soodnosnih vrednosti lestvic križno. Preostale protitrpne zgradbe so manj prehodne, tako da par iz take zgradbe in iz soodnosne ergativne zgradbe prebija nenaravno okolje prehodnost. Povezovanje soodnosnih vrednosti lestvic je tedaj vzporedno. Nenaravno okolje tvori tudi prizadeto, kadar se obravnavajo njegove skladenjske, ne pomenske, lastnosti (npr. njegov sklon, ne morda stopnja vplivanosti od glagolskega dejanja). V izpeljavah, ki se dotikajo prizadetega te vrste, je povezovanje soodnosnih vrednosti lestvic križno. Zajetih je 18 ergativnih jezikov, največ s Kavkaza in s tihomorskega področja.